

## **REMARKS/ARGUMENTS**

### **Status of the Claims**

Claims 1 and 11-14 have been amended to further define the features of the present invention. Support for the amendments to claims 1 and 11-14 may be found, at least at, paragraphs [0051], [0052], [0053], [0054], [0055], and [0056] of the application as originally filed. Applicants submit that the amendments to the claims introduce no new matter.

### **Amendments to the Specification**

Paragraph [0064] has been amended to correct a clerical error. Applicants submit that the amendments to the specification introduce no new matter.

### **Rejection under 37 CFR 1.84(p)(4)**

FIG. 16 has been amended to replace the text “120 Dead Zone” with “130 Dead Zone” to address the Examiner’s objection under 37 CFR 1.84(p)(4).

Applicants concurrently file a replacement sheet 11 as well as an annotated sheet 11 of drawings, showing the changes made in the current amendment to the drawings relative to the original sheet. Applicants submit that the amendments to the drawings introduce no new matter.

### **Rejections under 35 U.S.C 103(a)**

#### **A. Claim 1: Jun in view of Liu**

The Examiner has rejected claim 1 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent Publication No. 2005/0313656 to Liu. Applicants respectfully traverse the Examiner’s rejection and submits the following for the Examiner’s consideration.

Claim 1 has been amended to recite:

A video-on-demand system enabling a user to modify play parameters of a selected video, said system comprising:

a media server for transmitting video signal comprising the selected video, said media server generating a first series of searchable

index frames from the video signal during transmission of the video signal, and storing said first series of searchable index frames thereon;

a client player for receiving the video signal and displaying the selected video, said client player generating a second series of searchable index frames from the received video signal and storing the second series of searchable index frames thereon, said client player accessing said first series or said second series of searchable index frames and obtaining a required searchable index frame therefrom upon receipt of a request to modify the play parameters for display of the selected video, said required searchable index frame providing a new starting point for displaying the selected video, said media server and said client player being operatively connected by a communication network.

Jun teaches a video browsing apparatus for simultaneously delivering information on video content and structure to users. The video browsing apparatus includes a client apparatus that includes a video browsing interface 11, a control means 12 and an input means 13. Jun teaches that the video browsing interface 11 displays a scene key frame list composed of key frames presenting each scene of a video, and the scene structure key frame list composed of important key frames of each scene on the scene key frame list. The control means 12 controls the reproduction of a media file according to index information, and controls non-linear browsing based on the scene key frame list and the scene structure when a request for non-linear browsing is received. The control means 12 also prepares relevant index information by loading a media file.

Jun further teaches that the video browsing apparatus includes a server that has a media file storing means 15 that stores a variety of media in files to provide an appropriate media file for video browsing to a user, and an index storing means 14 that stores structural information about scenes or shots, and index information including relevant key frame information and time information.

Jun does not teach or suggest a video-on-demand system that includes the feature of "said media server generating a first series of searchable index frames from the video signal during transmission of the video signal, and storing said first series of searchable index frames thereon". Instead, Jun discloses an index storing means that stores structural information about scenes or shots, and index information including relevant key frame information and time information. Thus, Jun fails to teach or suggest each and every feature of amended independent claim 1.

In the Office Action, the Examiner acknowledges that Jun does not teach a video-on-demand system that includes a client player as recited in claim 1. The Examiner, however, asserts that Liu teaches

this feature of the claimed invention. Applicants respectfully disagree with Examiner characterization of the Liu reference and submits that Liu does not cure the deficiencies of Jun.

Liu teaches a device for semantically compressing video data that includes a buffer having two or more buffer slots for receiving uncompressed video data that includes a plurality of video segments, and a processor connected to the buffer. The processor organizes a portion of the uncompressed video data into the two or more buffer slots such that each of the two or more buffer slots is filled with one or more of the received video data segments, thereby forming two or more buffered video portions corresponding to the two or more buffered video slots. The processor then applies a leaking rule to the two or more buffered video portions to extract and record one or more buffered video portions. An output means, connected to the processor, outputs the buffered video portions which were not extracted as compressed video data.

Liu further teaches, at paragraph [0085]:

As an illustration of video indexing and interactive searching, a result of indexing a sitcom video is shown in FIG. 8. Referring to FIG. 8, the user is provided with a set of top level units, in this case 11 frames, from which he or she may choose a particular segment to view. This may be done by clicking on a start key frame and an end key frame. For example, the user may select a segment between a key frame 656, and a key frame 2251. Then, any number of key frames of this video segment can be shown for user review. For example, indexing level 2 provides 7 key frames in this segment. The user can choose to display more key frames, by using a simple "click-drag" operation. An exemplary "click-drag" is a C++ Application shown in Appendix 7. The user clicks on the end frame of the selected video segment, holds the mouse button and drags the mouse to the side. As the start key frame and the end key frame move apart, the next most significant key frames fill in the empty area. Using this simple operation, the user can get any number of key frames at a particular level. (emphasis added)

Liu does not teach or suggest a video-on-demand system that includes, *inter alia*, "said client player generating a second series of searchable index frames from the received video signal and storing the second series of searchable index frames thereon" as recited in amended independent claim 1. Instead, Liu teaches that a processor organizes a portion of the uncompressed video data into the two or more buffer slots such that each of the two or more buffer slots is filled with one or more of the received video data segments.

Liu also does not teach or suggest the feature of "said client player accessing said first series or said second series of searchable index frames and obtaining a required searchable index frame therefrom upon receipt of a request to modify the play parameters for display of the selected video, said required searchable index frame providing a new starting point for displaying the selected video" as recited in amended claim 1.

Instead, Liu teaches that a user may choose a key frame to view a particular segment of a sitcom video. Thus, Liu fails to teach or suggest each and every feature of amended independent claim 1.

Applicants therefore submit that the cited Jun and Liu references, taken alone or in combination, fail to teach or suggest a video-on-demand system that includes all the features recited in amended independent claim 1. Thus, a skilled person, following the teachings of Jun and Liu, taken alone or in combination, could not arrive at the claimed invention in any predictable manner.

Accordingly, independent claim 1 is patentable over the teachings of Jun and Liu, taken alone or in combination.

**B. Claims 2, 4-7: Jun in view of Ellis**

The Examiner has rejected claims 2 and 4-7 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent Publication No. 2004/0117831 to Ellis. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Applicants submit that Ellis does not cure the deficiencies of Jun and Liu. In particular, Ellis fails to teach or suggest a video-on-demand system that includes the features of "said media server generating a first series of searchable index frames from the video signal during transmission of the video signal, and storing said first series of searchable index frames thereon", "said client player generating a second series of searchable index frames from the received video signal and storing the second series of searchable index frames thereon", and "said client player accessing said first series or said second series of searchable index frames and obtaining a required searchable index frame therefrom upon receipt of a request to modify the play parameters for display of the selected video, said required searchable index frame providing a new starting point for displaying the selected video" as recited in amended claim 1. Thus, amended independent claim 1 is patentable over the combined teachings of Jun, Liu, and Ellis.

Dependent claims 2 and 4-7 include at least all the limitations of independent claim 1 and therefore dependent claims 2 and 4-7 claims are patentable over the combined teachings of Jun, Liu, and Ellis, either alone or in combination.

**C. Claims 3, 8: Jun in view of Guedalia**

The Examiner has rejected claims 3 and 8 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent No. 6,721,952 to Guedalia. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Applicants submit that Guedalia does not cure the deficiencies of Jun and Liu. In particular, Guedalia fails to teach or suggest a video-on-demand system that includes features of "said media server generating a first series of searchable index frames from the video signal during transmission of the video signal, and storing said first series of searchable index frames thereon", "said client player generating a second series of searchable index frames from the received video signal and storing the second series of searchable index frames thereon", and "said client player accessing said first series or said second series of searchable index frames and obtaining a required searchable index frame therefrom upon receipt of a request to modify the play parameters for display of the selected video, said required searchable index frame providing a new starting point for displaying the selected video" as recited in amended claim 1. Thus, amended independent claim 1 is patentable over the combined teachings of Jun, Liu, and Guedalia.

Dependent claims 3 and 8 include at least all the limitations of independent claim 1 and therefore dependent claims 3 and 8 are patentable over the combined teachings of Jun, Liu, and Guedalia, either alone or in combination.

**D. Claim 9: Jun in view of Ellis**

The Examiner has rejected claim 9 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent Publication No. 2004/0117831 to Ellis. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Applicants submit that Ellis does not cure the deficiencies of Jun and Liu. In particular, Ellis fails to teach or suggest a video-on-demand system that includes the features of "said media server generating a first series of searchable index frames from the video signal during transmission of the video signal, and storing said first series of searchable index frames thereon", "said client player generating a second series of searchable index frames from the received video signal and storing the second series of searchable index frames thereon", and "said client player accessing said first series or said second series of searchable index frames and obtaining a required searchable index frame therefrom upon receipt of a request to modify the play parameters for display of the selected video, said required searchable index frame providing a new

starting point for displaying the selected video” as recited in amended claim 1. Thus, amended independent claim 1 is patentable over the combined teachings of Jun, Liu, and Ellis.

Dependent claim 9 includes at least all the limitations of independent claim 1 and therefore dependent claim 9 is patentable over the combined teachings of Jun, Liu, and Ellis, either alone or in combination.

**E. Claims 10, 11: Jun in view of Liu, further in view of Watt**

The Examiner has rejected claims 10 and 11 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun, in view of U.S. Patent Publication No. 2005/0213656 to Liu, further in view of U.S. Patent Publication No. 2004/0221323 to Watt. Applicants respectfully traverse the Examiner’s rejection and submit the following for the Examiner’s consideration.

Regarding dependent claim 10, Applicants submit that Watt does not cure the deficiencies of Jun and Liu. In particular, Watt fails to teach or suggest a video-on-demand system that includes either the features of “said media server generating a first series of searchable index frames from the video signal during transmission of the video signal, and storing said first series of searchable index frames thereon”, “said client player generating a second series of searchable index frames from the received video signal and storing the second series of searchable index frames thereon”, and “said client player accessing said first series or said second series of searchable index frames and obtaining a required searchable index frame therefrom upon receipt of a request to modify the play parameters for display of the selected video, said required searchable index frame providing a new starting point for displaying the selected video” as recited in amended claim 1. Thus, amended independent claim 1 is patentable over the combined teachings of Jun, Liu, and Watt.

Dependent claim 10 includes at least all the limitations of independent claim 1 and therefore dependent claim 10 is patentable over the combined teachings of Jun, Liu, and Watt.

Regarding claim 11, independent claim 11 has been amended to recite:

A method for enabling a user to modify play parameters of a selected video in a video-on-demand system, said method comprising  
establishing a connection between a media server and a client player;  
receiving, by said media player, a request for the selected video from said client player;

transmitting, by said media player, a video signal comprising the selected video to the client player;

generating, at the media player, a first series of searchable index frames from the video signal while transmitting the video signal and storing the first series of searchable index frames at the media player;

receiving the video signal and displaying said selected video by the client player;

generating, at the client player, a second series of searchable index frames from the received video signal while receiving the video signal, storing the second series of searchable index frames and displaying the selected video at the client player;

receiving, by the client player, a request to modify play parameters of the selected video from the user;

searching said first series or second series of searchable index frames for a required searchable index frame, said required searchable index frame providing a new starting point for displaying said selected video;

displaying said selected video from said new starting point; and terminating said connection between a media server and a client player upon completion of display of the selected video.

Applicants submit that since independent claim 11 includes similar subject matter as independent claim 1, independent claim 11 is patentable over the teachings of Jun and Liu, taken alone or in combination, for the same reasons independent claim 1 is patentable over Jun and Liu, taken alone or in combination.

Watt does not cure the deficiencies of Jun and Liu. In particular, Watt fails to teach or suggest the features of “generating, at the media player, first series of searchable index frames from the video signal while transmitting the video signal and storing the first series of searchable index frames at the media player”, “generating, at the client player, a second series of searchable index frames from the received video signal while receiving the video signal, storing the second series of searchable index frames and displaying the selected video at the client player”, and “searching said first series or second series of searchable index frames for a required searchable index frame, said required searchable index frame providing a new starting point for displaying said selected video” as recited in amended independent claim 11. Thus, amended independent claim 11 is patentable over the combined teachings of Jun, Liu, and Watt, either alone or in combination.

**F. Claim 12: Jun in view of Ellis**

The Examiner has rejected claim 12 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent Publication No. 2004/0117831 to Ellis. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Applicants submit that Ellis does not cure the deficiencies of Jun, Liu and Watt. In particular, Ellis fails to teach or suggest a video-on-demand system that includes the features of "generating, at the media player, first series of searchable index frames from the video signal while transmitting the video signal and storing the first series of searchable index frames at the media player", "generating, at the client player, a second series of searchable index frames from the received video signal while receiving the video signal, storing the second series of searchable index frames and displaying the selected video at the client player", and "searching said first series or second series of searchable index frames for a required searchable index frame, said required searchable index frame providing a new starting point for displaying said selected video" as recited in amended claim 11. Thus, amended independent claim 11 is patentable over the combined teachings of Jun, Liu, Watt, and Ellis.

Dependent claim 12 includes at least all the limitations of independent claim 11 and therefore claim 12 is also patentable over the combined teachings of Jun, Liu, Watt, and Ellis, either alone or in combination.

**G. Claim 13: Jun in view of Watt**

The Examiner has rejected claim 13 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent Publication No. 2004/0221323 to Watt. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Watt does not cure the deficiencies of Jun, Liu and Watt. In particular, Watt fails to teach or suggest a video-on-demand system that includes the features of "generating, at the media player, first series of searchable index frames from the video signal while transmitting the video signal and storing the first series of searchable index frames at the media player", "generating, at the client player, a second series of searchable index frames from the received video signal while receiving the video signal, storing the second series of searchable index frames and displaying the selected video at the client player", and "searching said first series or second series of searchable index frames for a required searchable index frame, said required searchable index frame providing a new starting point for displaying said selected video" as recited in



amended claim 11. Thus, amended independent claim 11 is patentable over the combined teachings of Jun, Liu, and Watt.

Dependent claim 13 include at least all the limitations of independent claim 11 and therefore dependent claim 13 is also patentable over the combined teachings of Jun, Liu, and Watt, either alone or in combination.

**H. Claim 14: Jun in view of Ellis, further in view of Guedalia**

The Examiner has rejected claim 14 as being unpatentable over U.S. Patent Publication No. 2003/0122861 to Jun, in view of U.S. Patent Publication No. 2004/0117831 to Ellis, further in view of U.S. Patent No. 6,721,952 to Guedalia. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Applicants submit that Guedalia does not cure the deficiencies of Jun, Liu and Ellis. In particular, Guedalia fails to teach or suggest a video-on-demand system that includes the features of "generating, at the media player, first series of searchable index frames from the video signal while transmitting the video signal and storing the first series of searchable index frames at the media player", "generating, at the client player, a second series of searchable index frames from the received video signal while receiving the video signal, storing the second series of searchable index frames and displaying the selected video at the client player", and "searching said first series or second series of searchable index frames for a required searchable index frame, said required searchable index frame providing a new starting point for displaying said selected video" as recited in amended claim 11. Thus, amended independent claim 11 is patentable over the combined teachings of Jun, Liu, Watt, Ellis, and Guedalia.

Dependent claim 14 includes at least all the limitations of independent claim 11 and therefore dependent claim 14 is also patentable over the combined teachings of Jun, Liu, Watt, Ellis, and Guedalia, either alone or in combination.

**I. Claim 15: Jun in view of Sherr**

The Examiner has rejected claim 15 as being unpatentable over U.S Patent Publication No. 2003/0122861 to Jun in view of U.S. Patent Publication No. 2002/0032905 to Sherr. Applicants respectfully traverse the Examiner's rejection and submit the following for the Examiner's consideration.

Applicants submit that Sherr does not cure the deficiencies of Jun, Liu and Watt. In particular, Sherr fails to teach or suggest a video-on-demand system that includes the features of “generating, at the media player, first series of searchable index frames from the video signal while transmitting the video signal and storing the first series of searchable index frames at the media player”, “generating, at the client player, a second series of searchable index frames from the received video signal while receiving the video signal, storing the second series of searchable index frames and displaying the selected video at the client player”, and “searching said first series or second series of searchable index frames for a required searchable index frame, said required searchable index frame providing a new starting point for displaying said selected video” as recited in amended claim 11. Thus, amended independent claim 11 is patentable over the combined teachings of Jun, Liu, Watt, and Sherr.


Dependent claim 15 includes at least all the limitations of independent claim 11 and therefore claim 15 is also patentable over the combined teachings of Jun, Liu, Watt, and Sherr, either alone or in combination.

#### Conclusion

In view of the foregoing, withdrawal of the rejections under U.S.C. 35 103(a) is respectfully requested. Applicants believe that this application is now in condition for allowance and early notice thereof is respectfully requested.

Respectfully submitted,

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James A. Culverwell  
Registration No.: 58,175  
Attorney for Applicants

K&L GATES LLP  
State Street Financial Center  
One Lincoln Street  
Boston, Massachusetts 02111-2950  
Tel. No.: (617) 951-9052  
Fax No.: (617) 261-3175